

Remarks

Claims 25-42 are pending in the subject application. Applicant acknowledges that claims 38, 39, and 42 have been withdrawn from further consideration as being drawn to a non-elected invention. Applicant also acknowledges the Examiner's withdrawal of the rejections under 35 USC §112, second paragraph, and 35 USC §§102(b) and 103(a). By this Amendment, Applicant has canceled claim 36 and added new claims 43-45. Support for the new claims can be found throughout the subject specification, including for example, at page 8, lines 17-20, and in the claims as originally filed. Entry and consideration of the amendment and new claims presented herein is respectfully requested. Accordingly, claims 25-35 and 37-45 are currently before the Examiner. Favorable consideration of the pending claims is respectfully requested.

As an initial matter, Applicant notes that there may be some confusion as to Applicant's request for rejoinder of non-elected claims 38, 39, and 42 presented in the Amendment dated January 23, 2003. Under the heading "Election/Restrictions" in the Office Action, the Examiner states that "The restriction requirement was already made final in the Office Action (paper No. 13) mailed on 10/23/02. No further traversal will be considered. If Applicants do not agree with the restriction requirement, Applicants may petition the Commissioner to review the restriction requirement according to 37 CFR 1.144." Applicant acknowledges, as noted in the preceding paragraph, that currently pending claims 38, 39, and 42 have been withdrawn from further consideration as being drawn to a non-elected invention. Applicant wishes to clarify that Applicant is not traversing the Restriction Requirement; Applicant is only presenting a request for rejoinder of withdrawn method of use claims upon an indication of an allowable composition of matter claim. The fact that the Office Action dated October 23, 2002 made the restriction final does not preclude Applicant from subsequently requesting rejoinder of claims 38, 39 and 42 in the subject application. As to rejoinder of restricted claims, MPEP §821.04 provides:

Where the application as originally filed discloses the product and the process for making and/or using the product, and only claims directed to the product are presented for examination, when a product claim is found allowable, applicant may present claims directed to the process of making and/or using the patentable product by way of amendment pursuant to 37 CFR 1.121. In view of the rejoinder procedure, and in order to expedite prosecution, **applicants are encouraged to present such**

process claims, preferably as dependent claims, in the application at an early stage of prosecution. Process claims which depend from or otherwise include all the limitations of the patentable product will be entered as a matter of right if the amendment is presented prior to final rejection or allowance. (emphasis added)

Applicant notes that claims 38, 39, and 42 include all the limitations of composition of matter claim 25. Accordingly, as provided for in MPEP §821.04, Applicant respectfully requests, upon the Examiner's determination that an elected composition of matter claim is allowable, that withdrawn claims 38, 39, and 42 be rejoined for examination in the subject application.

Claims 25-37, 40, and 41 are rejected under 35 USC §112, first paragraph, on the grounds that the subject specification does not provide sufficient written description so as to reasonably convey to the skilled artisan at the time the application was filed that the inventors had possession of the claimed invention. Specifically, the Examiner asserts there is insufficient written description for "a functional variant" of the homeodomain of antennapedia. Applicant respectfully asserts that there is adequate written description in the subject specification to convey to the ordinarily skilled artisan that Applicant was in possession of the claimed invention at the time the application was filed.

The Examiner states that the term "functional variant" encompasses a vast genus of polypeptides that comprise any type of variation. However, Applicant notes that the claims specify that the variants retain the functional ability of the antennapedia, *e.g.*, to permit translocation. Thus, Applicant is not claiming any and all variants of the homeodomain of antennapedia. In addition, page 10 of the specification refers to several publications which disclose additional variants of the antennapedia homeodomain. Therefore, Applicant respectfully asserts that the subject specification already provides sufficient guidance for the skilled artisan as to numerous functional variants of the homeodomain of antennapedia that will be of utility in the present invention.

Applicant also respectfully asserts that the production of variants is a routine technique in the art and that the specification teaches how to test for functional activity. The federal courts have made it clear that an applicant is not required under the patent laws to explicitly teach in an application each and every variation of an invention that can be used for the intended purpose disclosed in a specification in order to satisfy the written description requirement of 35 USC §112. The recitation that a variant is a functional variant means that an ordinarily skilled artisan will be

able to determine whether a variant is within the scope of the invention. Thus, there is sufficient disclosure in the specification regarding functional variants; the ordinarily skilled artisan would have no difficulty in establishing whether a variant of the homeobox domain of antennapedia has the functional translocation activity. Accordingly, Applicant respectfully asserts that the specification provides a sufficient written description that conveys to the skilled artisan that the Applicant was in possession of the claimed invention at the time the application was filed. Reconsideration and withdrawal of the rejection under 35 USC §112, first paragraph, is respectfully requested.

Claims 25-37, 40, and 41 are rejected under 35 USC §112, first paragraph, as nonenabled by the subject specification. Under this rejection, the Examiner indicates that the subject specification does enable a conjugate comprising the fusion protein of homeodomain of the antennapedia and a second protein of interest that is at least 100 amino acid in length, and optionally an amino acid tail that binds to an immobilized substrate, wherein the conjugate is not denatured. However, the Examiner also asserts that the specification does not teach how to make or use a conjugate that comprises a nucleic acid. Applicant respectfully asserts that the claims are enabled by the subject specification.

Applicant would like to bring to the Examiner's attention that pages 12 and 13 of the subject specification disclose the use of a conjugate of the invention that can comprise a nucleic acid. In particular, conjugates comprising either a GAL4 protein or histone are disclosed, and it is indicated that these conjugates can bind nucleic acids for delivery within a cell. Histone is a well-known DNA-binding protein and has been used in the past to facilitate entry of nucleic acids into a cell membrane. Accordingly, one embodiment of a conjugate of the invention comprises a histone having nucleic acid bound thereto. There is no reason to doubt that a conjugate of the invention comprising a histone would not function in the manner contemplated in the subject specification. In addition, example 4 at pages 31-35 of the subject specification describes the preparation of a conjugate with OCT-2.4, which is a DNA binding protein. Thus, the subject specification does provide several specific examples of a conjugate of the invention that can comprise nucleic acids.

Also under this rejection, the Examiner indicates that the specification does not teach a specific utility for a conjugate that binds to nucleic acid. Applicant respectfully asserts that there is a long established utility for delivering DNA into a cell and a skilled artisan would recognize this

utility when considering the description in the specification. The subject specification, at page 2, lines 24-25, contemplates delivery of nucleic acid for gene therapy applications. Page 12, lines 13-14, of the subject specification also contemplates use of the invention for delivery of a reporter gene. Thus, Applicant respectfully asserts that the subject specification does teach how to use the claimed invention.

The Examiner also indicates under this rejection that it is unpredictable whether a conjugate of the invention having a second region that is denatured will translocate across the cell membrane. Applicant respectfully asserts that an ordinarily skilled artisan would expect that a conjugate of the invention having a non-denatured first region will translocate across cell membranes even if the second region is denatured. The first region is specified as non-denatured and it is this region that is responsible for translocation. If the second region is denatured this would not be expected by the skilled artisan to effect translocation of the conjugate. Accordingly, Applicant respectfully asserts that the subject specification enables conjugates where the second region is denatured or non-denatured.

In view of the above remarks, reconsideration and withdrawal of the rejection under 35 USC §112, first paragraph, is respectfully requested.

It should be understood that the amendments presented herein have been made solely to expedite prosecution of the subject application to completion and should not be construed as an indication of Applicant's agreement with or acquiescence in the Examiner's position.

In view of the foregoing remarks and amendments to the claims, Applicant believes that the currently pending claims are in condition for allowance, and such action is respectfully requested.

The Commissioner is hereby authorized to charge any fees under 37 CFR §§1.16 or 1.17 as required by this paper to Deposit Account No. 19-0065.

Applicant invites the Examiner to call the undersigned if clarification is needed on any of this response, or if the Examiner believes a telephonic interview would expedite the prosecution of the subject application to completion.

Respectfully submitted,



Doran R. Pace
Patent Attorney
Registration No. 38,261
Phone No.: 352-375-8100
Fax No.: 352-372-5800
Address: 2421 N.W. 41st Street, Suite A-1
Gainesville, FL 32606-6669

DRP/sl